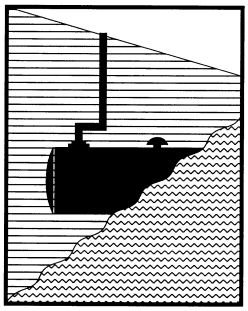

UST INFORMATION

VAPOR MONITORING

The following handout provides information on vapor monitoring as a leak detection method for underground storage tanks (USTs) and piping. In addition, a map and log sheet are provided on which to document tank, piping, and monitoring well locations as well as monthly leak checks. When installed and operated according to manufacturer's instructions, vapor monitoring systems meet both federal and state leak detection requirements for underground storage tanks and piping.

Vapor monitoring uses strategically placed monitoring wells in the backfill or surrounding soil around the tanks and piping to measure for the presence of product fumes which may indicate a leak. Monitoring can be performed manually once a month with a portable field instrument or with permanently installed equipment which automatically and continuously monitors soil gas vapors and responds with a visual or audible alarm when a leak is detected.

Vapor monitoring wells must be properly installed within the tank backfill and clearly labeled and locked when not in use. The backfill between the UST and monitoring well should be of a permeable nature to allow diffusion of the leaked product vapors to the sensor (i.e., sands, gravels, or other coarse material). The well must be constructed so the screen intercepts any vapor plumes and properly sealed to prevent surface contamination from entering the well. Boring logs and well construction diagrams should be documented and readily available at the site. Sites with high water tables or saturated soil conditions inhibit vapor movements and are poor candidates for vapor monitoring systems. Use of a different leak detection method should also be considered at sites where past contamination may interfere with the detection of a current leak.

The substance stored in the underground storage tank system must be volatile so the vapor monitor can detect fumes from the released product. Monitoring devices should be calibrated annually to ensure that they are working properly, and vapor monitoring results carefully interpreted to differentiate between spills, interferences, and actual leaks in the tank system.

The number and placement of vapor monitoring wells for underground storage tank systems is site specific and depends on the size, number and locations of the tanks and piping at the site. Generally, one well per 20 to 40 feet surrounding tanks and piping is sufficient if the monitoring well is installed in the backfill surrounding the tank system. In all cases, the Department shall be consulted when determining the correct number and placement of vapor monitoring wells.

For further information, contact the North Dakota Department of Health, Division of Waste Management, Underground Storage Tank Program, 918 E. Divide Ave., 3rd Fl., Bismarck, ND 58501-1947, or telephone 701.328.5166. Visit our website at www.ndhealth.gov/wm for forms/guidelines/rules.

Facility Map

Sketch the site layout depicting the location of the monitoring well(s) in relation to the underground storage tank systems (tanks and piping), pump islands, and facility buildings. Draw a north arrow, label tank sizes, and number the monitoring wells (i.e., MW #1) for recording purposes on the monthly log sheet.